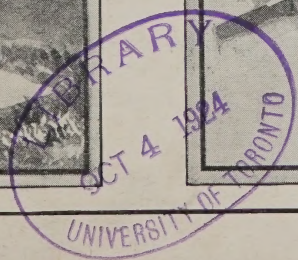


ATTRACTING BIRDS *with* FOOD *and* WATER

By R. OWEN MERRIMAN



The following publications have been consulted in the preparation of this pamphlet; and those who wish further information on the subject with which it deals are referred to these sources. The subject is discussed in many publications besides those listed here.

THE CONSERVATION OF THE WILD LIFE OF CANADA, C. Gordon Hewitt.

WILD BIRD GUESTS; HOW TO ENTERTAIN THEM, Ernest Harold Baynes.

BIRDS OF PEASEMARSH, E. L. Marsh.

HOW TO ATTRACT THE BIRDS, Neltje Blanchan.

HOW TO ATTRACT AND PROTECT WILD BIRDS, Martin Hiesemann.

PRACTICAL METHODS FOR ATTRACTING WILD BIRDS, Eleanor Mellen.

PLANTS THAT ATTRACT AND SHELTER BIRDS AND SOME THAT
PROTECT CULTIVATED FRUIT, E. H. Forbush.

ATTRACTING BIRDS ABOUT THE HOME.

FOOD, FEEDING AND DRINKING APPLIANCES AND NESTING MATERIAL TO ATTRACT BIRDS, E. H. Forbush.

U.S.A. Department of Agriculture, Farmers' Bulletins:—

No. 493 the English Sparrow as a Pest, Ned Dearborn, 1912.

No. 621 How to Attract Birds in N.E. U.S., W. L. McAtee, 1914.

No. 760 How to Attract Birds in N.W. U.S., W. L. McAtee, 1918.

No. 912 How to Attract Birds in East Central States, W. L. McAtee, 1922.

No. 1239 Community Bird Refuges, W. L. McAtee, 1921.

"The Auk," "The Canadian Field-Naturalist," "Bird-Lore," and other periodical publications devoted to ornithology, natural history in general and conservation.

ATTRACTING BIRDS

WITH

FOOD AND WATER

The crows go by, a noisy throng;
About the meadows all day long
The shore-lark drops his brittle song;
And up the leafless tree

The nut-hatch runs, and nods, and clings;
The bluebird dips with flashing wings,
The robin flutes, the sparrow sings,
And the swallows float and flee.

—Archibald Lampman.



DEPARTMENT OF THE INTERIOR

Hon. CHARLES STEWART, Minister

W. W. CORY, C.M.G., Deputy-Minister

J. B. HARKIN,
Commissioner Canadian National Parks,
Ottawa

IF you would attract beautiful and interesting wild birds about you, it is necessary to consult their needs in the matter of food, shelter and water. Bird houses have been treated in an earlier pamphlet, copies of which are obtainable. Our small birds, which have a great National value as weed seed eaters and insect destroyers, will reward the efforts made in their behalf. The Canadian National Parks Branch of the Department of the Interior has published this pamphlet to meet many enquiries from persons who desire to protect their own home birds, and it is expected that a study of it will result in benefit both to the birds and to the persons who extend the birds their hospitality.

Attracting Birds with Food and Water

By ROBERT OWEN MERRIMAN
of Hamilton, Ontario

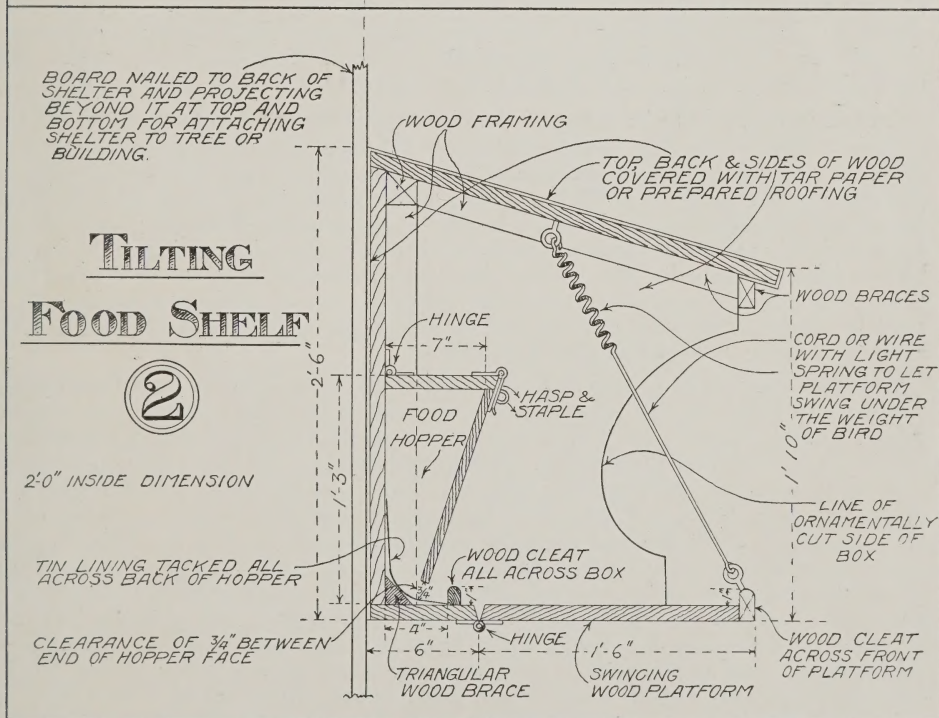
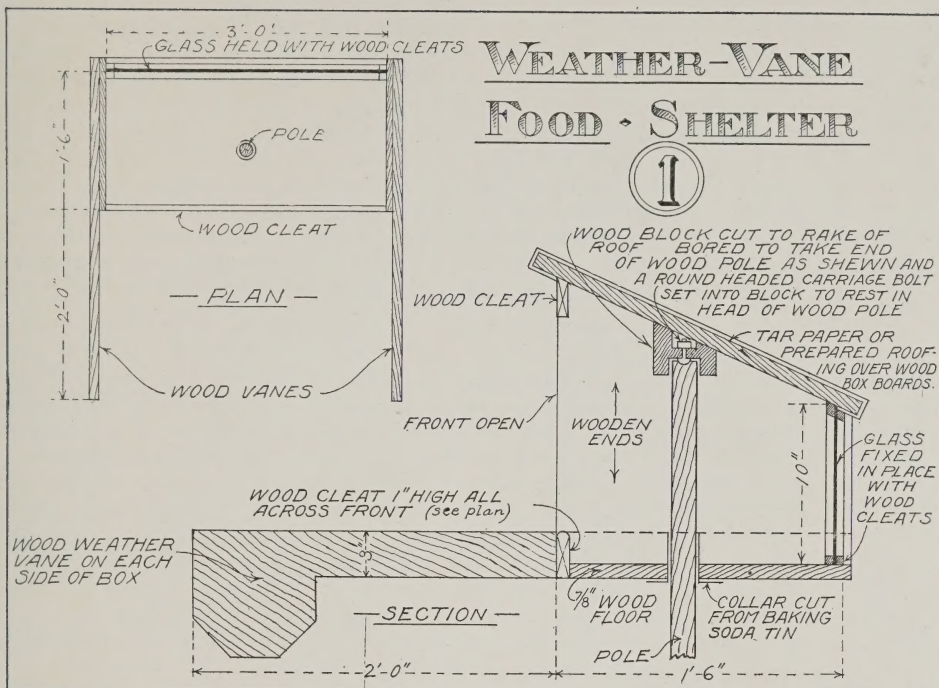
WHEREVER man has established himself, he has necessarily altered that delicate adjustment in the competition between different forms of life which we call "the balance of nature;" and in so doing he has often made trouble for himself. An example is the effect of cultivation on bird-life. By clearing the woods, ploughing the natural meadows, and draining the swamps, he has deprived many birds of their food and shelter; and thus he has lost to a great extent the help of the birds in his fight against insects and weeds. The wanton destruction of birds has been stopped; but this alone is not enough. We must use artificial means of attracting birds to our farms, gardens, and parks; and give them active help as well as protection to compensate for the many ways in which we have turned the balance of nature against them. One aspect of this work is dealt with in the pamphlet "Bird Houses and Their Occupants" by P. A. Taverner (obtainable on request from the Canadian National Parks Branch, Department of the Interior, Ottawa), and another is the subject of these pages.

FEEDING STATIONS

In the winter one sees the most direct results from feeding wild birds. At this season, an artificial food-supply will form the centre of activity for numbers of birds, which will do great work in devouring hibernating insects and their eggs, and in consuming weed-seeds, as well. When a sleet-storm sheaths all shrubbery and tree growth in ice, artificial supplies of food may save many birds from starvation, to continue their work through other seasons.

Winter feeding should begin before winter sets in. Stations should be established in sunny, sheltered positions early in the autumn; for some birds remain in a narrow area after winter descends, and they may not find the food, if it is not offered until after the snow has come. At first, small quantities of food may be placed here and there over a comparatively large area; and the outlying baits may be removed as the birds find their way to the main feeding station. Once established, food must always be available at the chosen spot; for it will attract a larger population of birds than would otherwise be supported in the locality, and this bird population would be scattered by even a brief interruption in the food supply.

Suet forms a good base for most winter foods of birds; for it furnishes the heat producing substances needed at this time. It is taken readily by many species of both insect-eating and seed-eating birds, it is cheap, it is easily handled, and, at least from the point of view of the birds, it does not deteriorate with time. At the writer's feeding station, Downy Woodpeckers have been seen enjoying suet which had been exposed to the weather for eighteen months. The simplest way to feed suet is to tie lumps of it to the trunks or to the under side of the larger branches of trees. Many windings of cord should be used, each tied separately, so that the suet can not fall when partly eaten.



The suet may be placed in a string bag of large mesh; or in small wire cages—a cheap sponge-holder does admirably; or again, a wire soap-dish may be tacked to a tree as a suet-basket. Wire suet-baskets made for bird feeding can be purchased from dealers. A word of caution seems necessary here; for a few cases are recorded in which birds have been severely injured by touching the frosty metal of a suet-basket with tongue or eye. This danger is, perhaps, not great; but it is as well to use wire suet-baskets only where squirrels learn to cut the cords and steal all the suet intended for the birds. Where House Sparrows ("English" Sparrows), are very troublesome, the suet may be suspended at the end of about two feet of cord, in such a way that it will swing freely in the wind. Only birds accustomed to feeding on swaying limbs of trees can successfully take food so placed, and the House Sparrow, in common with other ground-feeding birds, is excluded. A method of using suet as food for birds is depicted on the cover of this pamphlet.

Other foods besides suet should be used. Pieces of meat and meaty bones may be offered, and they should be placed in the manner described for lumps of suet. One should remember that seeds must be provided to attract the eaters of weed-seeds. Mixed grains, such as are sold as "scratch feeds" for poultry, are good if sufficiently fine. Chaff, screenings, sweepings from barn floors and granaries, and other similar waste materials are useful at the feeding station. Long lists of foods might be prepared; and experiments will soon extend the following suggestions:—Seeds of grasses, weeds, squash, melons, pumpkins, sunflowers, etc.; hemp, millet, buckwheat, and other small or broken grains; rolled oats and other coarse cereals; dried bread and cake crumbs; finely-broken dog-biscuit, table-scraps including meat, fat, and vegetables; cheese crumbs, which grocers are sometimes glad to give away; and nuts of many varieties. Results with cracked corn are often disappointing; but a cob of ripe corn tied in a tree is highly acceptable to Blue Jays, and is a splendid attraction for Cardinals, which now seem to be extending their range in South-western Ontario. A sheaf of wheat, tied straw uppermost to a tree-trunk near the ground but above the level of the snow, will prove a boon to Bobwhites and Pheasants in districts where these valuable game-birds are found. Observation will soon show what foods are appreciated by the guests at the feeding station, and the variety can be reduced or increased as seems necessary.

Food is not likely to be found by the birds if it is thrown into loose snow; and the feeding station should therefore be cleared or the snow packed hard with shovels or snowshoes. Plate I shows a Junco taking millet seed from a simple feeding tray used by the writer. The spot chosen for the feeding station should be near the trees in which suet is placed, and if possible it should be near evergreens and shrubbery; but it should be three or four yards away from any cover whence an enemy might spring on the feeding birds. Much of the value of a feeding place, for all kinds of birds, lies in the fact that they can find food there when storms make natural sources of supply unavailable. Care must be taken therefore to visit the feeding station periodically, and also immediately after every storm, to replenish the supply of food.

Various methods have been devised to protect the food offered to birds from loss by weather and from waste however caused. One plan is to throw the food into a brush pile or a simple shelter built of fir boughs or corn stalks, which will protect the birds as well as their food from the weather. A scheme originated by that famous pioneer in methods of attracting and protecting wild birds, Baron von Berlepsch, is to mix seeds and other foods with melted suet, and, while the mixture is still hot, to pour it over an evergreen branch to which much of the fatty mixture will adhere. The branch is then set up in the ground or tied to a tree; and the "bird-stone," which is the name given the hardened mass of fat and seeds, will afford food during snowstorms and immediately after them at which times other food is covered. "Bird-stone" will, of course, injure a living tree if poured on it. The following formula is used by Baron von Berlepsch:—White bread, dried and ground, $4\frac{1}{2}$ ozs.; Meat, dried and ground, 3 ozs.; Hemp, 6 ozs.; Crushed hemp, 3 ozs.; Maw, 3 ozs.; Poppy flour, $1\frac{1}{2}$ ozs.; Millet, white, 3 ozs.; Oats, $1\frac{1}{2}$ ozs.; Dried elderberries, $1\frac{1}{2}$ ozs.; Sunflower seeds, $1\frac{1}{2}$ ozs.; Ants' eggs, $1\frac{1}{2}$ ozs. To the total quantity of dry food is added about one and one-half times as much beef or mutton

suet. This formula may be varied by omitting some ingredients, by altering proportions, or by adding new ingredients. For example, the writer considers nuts a valuable addition; and the recipe used by him contains two parts of chopped nuts; usually green peanuts are chosen; one part each of sunflower, hemp, and millet seed; and smaller quantities of dried bread crumbs, and of ground bone, or meat-scraps, such as are sold for poultry; all mixed with a sufficient quantity of melted suet. As birds require grit to grind the seeds on which they feed, and as it often must be difficult for them to obtain it during the winter, the writer adds to this a small portion of sharp sand; but whether or not this is appreciated by the birds cannot be said certainly. In preparing "bird-stone," it will be found convenient to dry the bread before grinding it, but to grind the meat before drying it.

Besides being poured on a tree, there are other ways in which "bird-stone" may be used. Hardened lumps of it are good substitutes for the lumps of suet spoken of above.

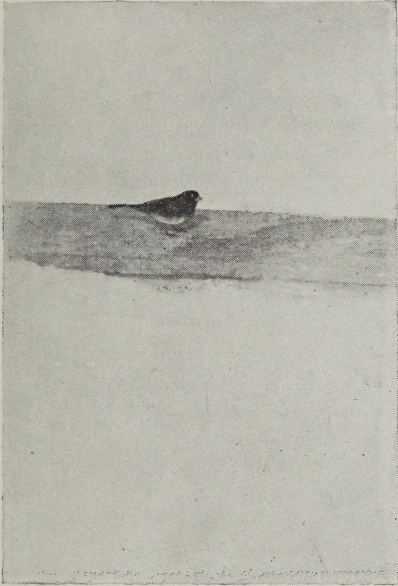


Plate I. A Food Tray in Winter

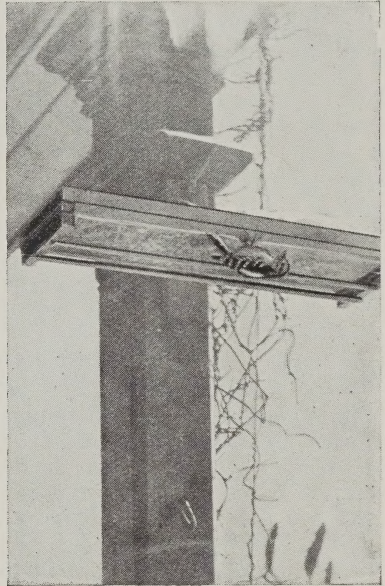


Plate II. "Bird Stone" sheltered from the snow

When intended for this use, a smaller proportion of suet is needed than when the mixture is to be poured on a branch. It can be used with the "food stick" which is simply a piece of wood of any convenient size in which auger holes or cracks have been made. To prepare the food stick for use, the holes or cracks are stuffed with the "bird-stone" while it is still soft enough to be moulded. The food stick is then nailed to a tree, swung by a cord, or placed in some other convenient spot for the birds. Others fill the cracks in a rough-barked tree with the "bird-stone." One of the best devices for offering suet or "bird-stone" to such birds as Woodpeckers, Chickadees, and Nuthatches, is the inverted food board designed by Mr. W. E. Saunders, of London, Ontario. Essentially it is a board with a perch about one inch from its surface. Melted suet or "bird-stone" is poured on the board and allowed to harden, when the food board is erected at the feeding station with the food downward. Snow and sleet will cover the upper surface of the board, but the food on the lower surface remains available to the birds mentioned, which cling, back down, below the perch and peck at the food above them. The inverted food board has the additional advantage of being inaccessible to all but an occasional House Sparrow; but this carries with it the disadvantage that it is also useless for other birds which habitually feed on the ground. This device is useful for feeding cheese as well as

suet, the cheese being melted and handled just as the suet is. Plates II and III show a Downy Woodpecker and a Black-capped Chickadee feeding from a device of this kind on the writer's veranda. Here a shallow tray was used instead of a plain board, as being easier to fill with melted "bird-stone." Another simple, weatherproof, feeding device is a coco-nut in which a large hole in the shell has been bored. The nut is then hung from the branch of a tree and the "meat" provides splendid food for the birds. When it is exhausted, the shell makes a good holder for suet or for "bird-stone."

The more elaborate shelters can be made from the working drawings, (figs. 1, 2 and 3), by anyone handy with tools; or they and other similar devices may be purchased from dealers. These shelters are accessible to such ground-feeding winter birds as Juncos, Snow Buntings, Goldfinches, etc.; and they are sometimes used by these birds as shelters from storms. The Weather-vane Food Shelter, (fig. 1), revolves freely with the wind; and, as it always faces away from storms, the interior remains mostly free from snow. Birds should be lured to this shelter by food sprinkled thickly on the ground below until they learn to fly within. The Tilting Food Shelf, (fig. 2), should be erected so that it faces away from the prevailing winds, and it should be visited after every storm which might blow snow or rain on the shelf. The advantage of this device is that House Sparrows do not use it freely and the food provided is therefore available for native birds. When a bird alights on the Shelf the bird's weight is enough to cause the Shelf to sag and this is said to alarm the House Sparrow, though other birds do not notice the movement. The Glass-screened Food Shelter, (fig. 3), may be made more attractive by tying evergreen branches to some of the supporting posts or to all of them. Food is placed on the lower shelves and on the ground beneath until the birds find their way to the upper and completely sheltered table. The glass screens must not be replaced with wood even when the Shelter is not intended to be under observation; for if that were done, the upper table would not receive enough light. The self-feeding hopper, included in the working drawing of the Tilting Food Shelf, (fig. 2), holds a supply of food for several weeks; and it may be incorporated in any of the other types of shelter. When necessary for the protection of the food from squirrels or the feeding birds from cats, the posts supporting these shelters may be sheathed in metal or fitted with the conical metal cat-guard depicted under the Weather-vane Food Shelter on the cover taking care that the squirrels or cats will not be able to reach the shelter in some other way than by the protected support. Mixtures of seeds and scraps, of the kinds mentioned in a preceding paragraph, are suitable for use in these shelters; and suet or "bird-stone" should be placed close at hand.

Feeding stations such as described above may with advantage be operated throughout the year. Plate IV shows a Song Sparrow enjoying the hospitality of the writer on a bright May morning; and here several species of birds are to be seen feeding their young during the summer. It seems to be due to the supply of "bird-stone" on inverted food boards that Nuthatches and Chickadees nest near the writer's feeding station; for, until this station was established, these birds were seldom seen in the locality during the summer months. At no time do the birds take all their food from artificial sources of supply; but the feeding station attracts and holds them in the vicinity in larger numbers than before it was in operation, and during both summer and winter they continue their work against noxious insects and weed-seeds while taking some food from the feeding stations. This work of maintaining a simple station to increase the numbers of useful birds in the neighborhood many times repays the trouble.

PLANTING FOR THE BIRDS

The thickets along the fences and the weeds on the roadsides, where so many birds used to feed, have disappeared or are disappearing; and in the gardens and shrubberies which man has planted, beauty of form or of flower has too often been the only guide in the selection of plants. But every gardener should also consider his allies, the birds, in planting; and the farmer will also find it profitable to devote some land to plants

attractive to birds. Lists of trees, shrubs, and climbers useful for this purpose are appended. Many of these merit a place in the garden and shrubbery even without considering the birds; and the cultivation of some of these plants will be a most useful method of attracting birds. The lists given here are based, (by permission, which is gratefully acknowledged), on the longer ones given in "The Conservation of the Wild Life of Canada," by C. Gordon Hewitt, D.Sc. (Chas. Scribner's Sons). In making a selection from the lists for planting in any particular locality, one should notice the season during which the various trees and shrubs carry fruit, and make provision for the birds during every season and especially during late winter and early spring when they find it most difficult to obtain food. Many of the trees and bushes which bear fruit in the summer will be found useful for protecting cultivated fruit from the attacks of birds. In the writer's garden, a seedling cherry which bears small, large-stoned, sweet fruit

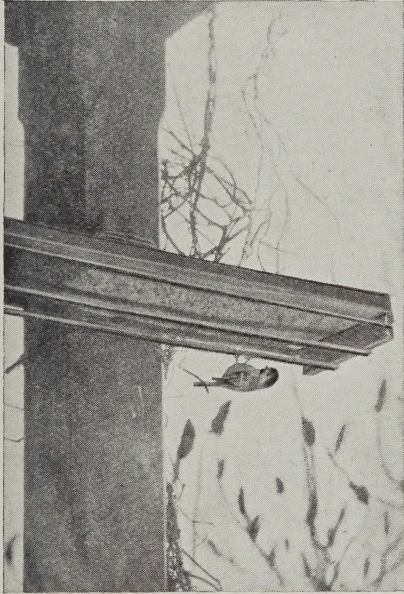


Plate III. *The Inverted Food Board*

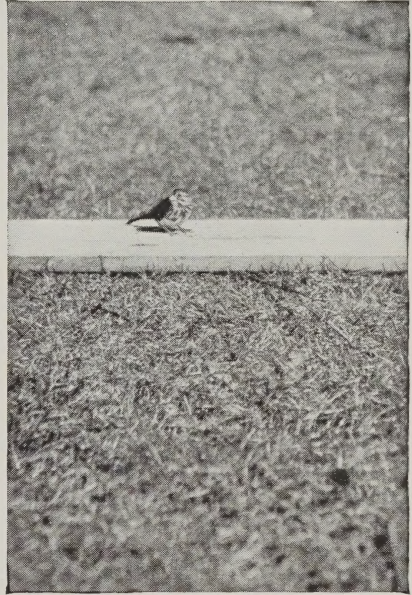
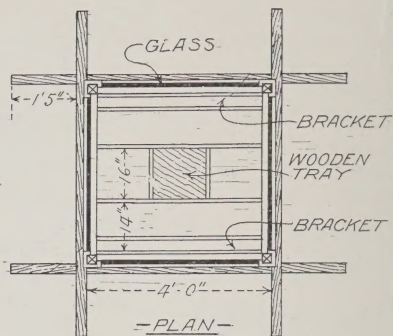
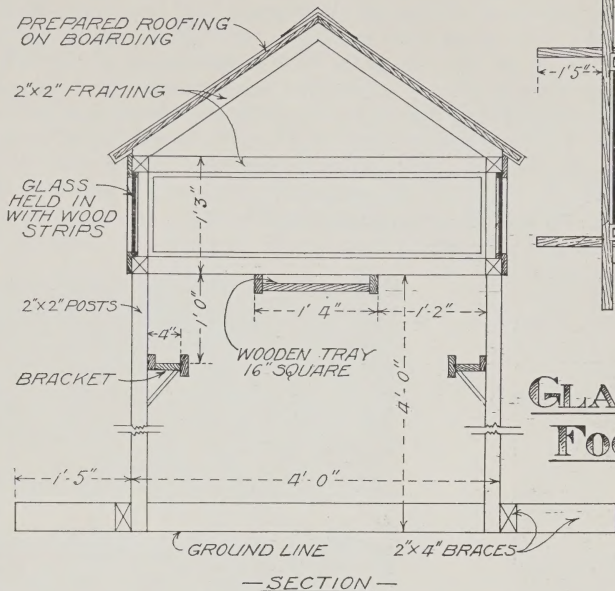


Plate IV. *A Food Tray in Summer*

gives almost perfect protection to several cultivated cherry trees nearby. The Russian Mulberry is especially good for this purpose, and is worth planting near every cherry orchard and berry patch in areas where it will grow successfully.

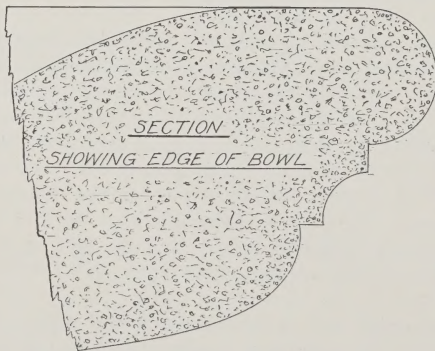
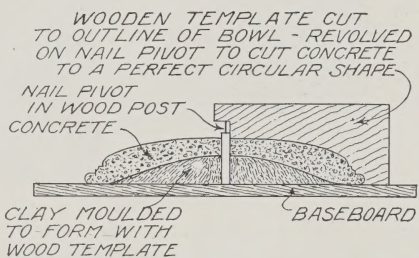
Planting provides shelter as well as food, and evergreens should be included in every selection from these lists. Fir trees near an orchard or in a garden will help to keep insectivorous birds at work in the locality during the winter. Baron von Berlepsch, the authority already quoted, advises that some of the deciduous trees and shrubs should be pruned in such a way as to provide numerous horizontal and vertical crotches and whorls, in which birds usually nest; and also to provide dense growth for concealment and protection of the nest and young. Thorny trees and shrubs are of use in providing shelter from hawks, cats, and other enemies. The lists of plants given at the end of this pamphlet are far from complete; but they are sufficient to give a basis for experiment and observation which, in this as in other methods of attracting birds, will afford great interest.

Many herbaceous plants are also of great use in attracting birds, especially by providing seeds in a more natural way than that described above; and they will furnish supplies for some species of birds which do not take the fleshy fruits of many of the trees and shrubs. Some think it advisable to allow a few patches of weeds to remain standing



GLASS SCREENED FOOD SHELTER

3



4

throughout the winter, to hold more seed-eating birds in the neighborhood. Probably the best method is to plant Sunflowers, millet, buckwheat, and other seed-bearing plants already mentioned for the birds to harvest. It will also be found that many plants cultivated for their flowers will attract birds if these plants are allowed to go to seed. For example, the seeds of Cornflowers and Hollyhocks attract many Goldfinches to the writer's garden. Those who wish to make special provision for Hummingbirds should see that their garden contains a succession of red or orange flowers, which seem especially attractive to these feathered gems. No lists of herbaceous plants are given, because it is easy for anyone to make experiments with plants which bear seed a few months after planting.



Plate V. Gathering Nesting Material

Game birds may also be catered for by suitable planting, but this work can be little more than mentioned here. Patches of grain planted in or near the woods will be taken by Pheasants where they have been introduced; Grouse will feed on many kinds of berries; and water fowl will appreciate the stocking of ponds and marshes with such food plants as wild celery. Along these lines, much can be done to improve and to perpetuate true sport. Only a few have the opportunity to undertake this aspect of the work; but anyone with a piece of ground can make provision for the more common bird neighbors by planting a selection from the trees, shrubs, and climbers listed at the end of this pamphlet.

NESTING MATERIAL

Another attraction for wild birds is an artificial supply of nesting material. Certain species find it increasingly difficult to obtain their special materials, and many will be encouraged to nest where building supplies are plentiful. A string bag or wire basket, similar to those advised above for suet, should be placed in an open situation at the end of a branch of a tree, on a shrub, or fastened to a stake or fence. It should contain non-absorbent cotton, lamb's wool, kapok, or other similar fibres; strings, worsteds, and threads, of various colours and thicknesses, cut into lengths of from four to twelve inches and loosely strung through the container; coarse fibres such as ravelled rope, horse-hair, etc., similarly placed; and perhaps some small feathers from an old pillow. Coloured

worsted and strings are said to attract the birds, though the writer has observed only white being taken. Plate V shows a Yellow Warbler taking cotton from such a device in the writer's garden. If the soil is very light, or the season very dry, wet clay may be placed on the lawns for Robins, Swallows, and other birds using mud in the construction of their nests. Birds are not lovers of tidiness as we know the word; and if a corner of the shrubbery is left unraked, at least during the early spring, the birds will find much nesting material there and probably food also. Such a corner with its natural carpet will attract the birds at all seasons; and if a brush-pile or a tangle of vines is added, Song Sparrows and other birds with similar nesting habits may be induced to build.

WATER FOR BATHING AND DRINKING

Water is of course a vital necessity for birds, and many species use it for bathing as well as for drinking. But in most gardens and even on many farms it is difficult for

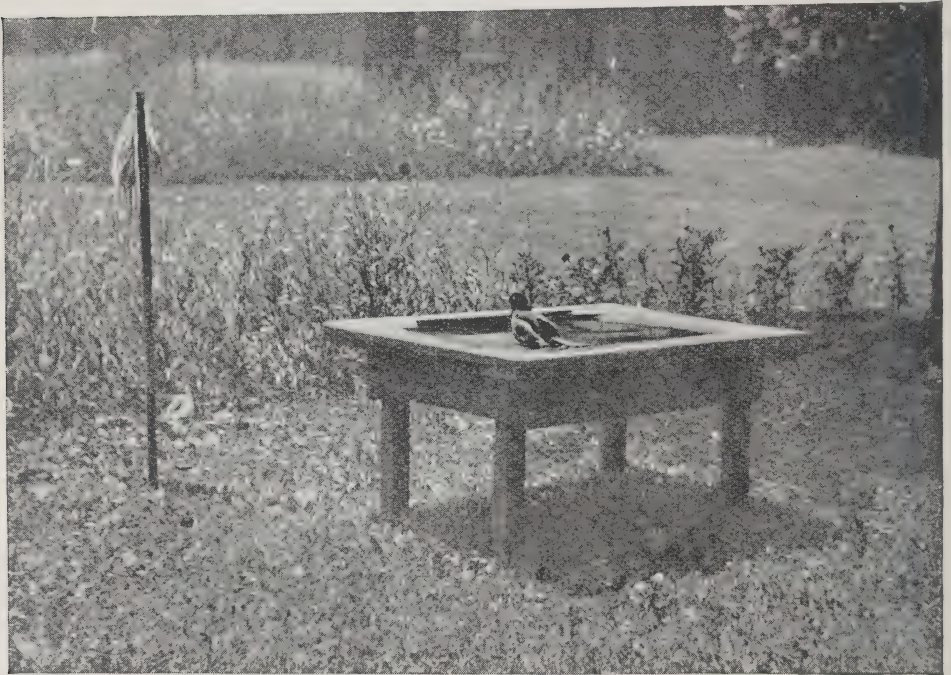


Plate VI.

A Robin Bathing

the birds to find water which they can use. When a stream is available, flat stones of various sizes should be placed in such positions that one or two will provide safe footing for thirsty birds, whatever the level of the water. When no natural stream or pond is present, artificial bird-baths should be made wherever the presence of birds is desired. The requisites of a good bird-bath are: 1st, shallow water of varying depth; 2nd, secure footing for the bathers; and, 3rd, safety from cats and other enemies. The water should not be more than one-half inch deep at the shallow side of the bath, and it is best to have the slanting bottom continue above the water-level as a sloping "shore." A small, shallow pan, filled with water and placed on the lawn, will be used by the common birds; and the depth of the water may be regulated by a slanting position of the pan. More elaborate baths should vary in depth from nothing at one side or all sides to five

inches in the middle; but in baths less than four feet across the greatest depth should not exceed three inches. Birds usually avoid baths with slippery bottoms; the smaller species, such as Wrens and Warblers, appearing to be afraid of slipping into water beyond their depth. Whatever the material of the bath, the bottom must therefore be slightly rough. When a shallow pan is used, as suggested above, a layer of small pebbles will serve to make the footing secure. A perch about a quarter of an inch high and wide placed along the water-line will be chosen instead of the flat edge of the bath by those birds which wish to drink without wetting their feathers. A wet bird is unable to rise quickly or to fly strongly, and special precautions must be taken to prevent cats from springing on the bathers. The edge of the bath should not be more than an inch or two above the water-level; for no matter how it may be secured against attack, birds do not go freely to a bath from which they cannot watch for the possible approach of an enemy. In addition to this, baths should be at least twelve feet from high grass in which an enemy might lurk unless the bath is raised well above the ground or surrounded by a cat-proof hedge or fence.

Unfortunately, not all advertised bird-baths meet all the above requirements, though there are many good baths on the market. It is, however, easy to construct a bird-bath, and many will prefer to build their own instead of buying one. As has been said already, a shallow pan with a rough bottom, partly filled with water and slightly tilted, will attract many birds; and the writer has seen fair results from an old kitchen

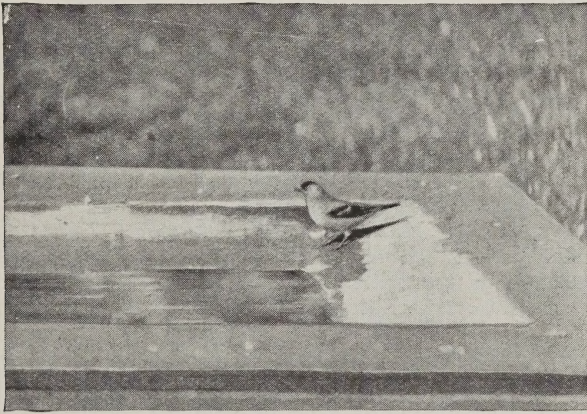


Plate VII.

A Goldfinch Drinking

sink mounted on a tree stump. The writer's own bird-bath, which has been used by fifteen species of birds this summer, is made of galvanized iron bent to form a vessel three feet long and two feet wide, three inches deep across the middle and sloping to no depth at both ends. It is mounted in a wooden frame which raises it eighteen inches from the ground and it is encircled with a platform six inches wide on which the birds enjoy sunning themselves after a dip. The bath was painted dark green, and fine sand was sprinkled over it while the paint was wet so that the bottom would not be quite smooth. Two views of this bath, being used by a Robin and by a Goldfinch, are given in Plates VI and VII.

More ornamental baths may be made of concrete. A simple method is to fill a cheese-box with concrete, and before the concrete sets, to shape a hollow in one end of the cylinder of concrete so made by pressing in a wooden bowl, which, with the cheese-box, is afterwards removed. Larger baths may be made by a similar method; and another good type of bird-bath is a boulder with a natural or chiselled basin. These may be incorporated in garden fountains, lily pools, and fish ponds; but in every case the three requisites given above must be met, and plants must not afford ambushes for the enemies of the birds. Large ponds, natural or artificial, will be used by Wild Ducks

and Geese if a little trouble is taken with decoys, especially in getting the first birds to come, as has been proved by Jack Miner's famous Bird Sanctuary near Kingsville, Ontario, on which all the ponds have been excavated.

Sometimes a bird-bath can be made safe only by raising it above the ground; and a pedestal bath suits the style of some gardens better than a flat design. For such cases a simple method of construction is shown in fig. 4, the design of Mr. P. A. Taverner, Ornithologist to the Geological Survey of Canada. Connections for a water supply may be made through the pedestal. In all cases, running water is an additional attraction, if it is not rough; and Hummingbirds and some others are said to delight in a fine spray. Inability to provide an elaborate bath should not deter anyone from setting up a simple one.

CONCLUSION

It is impossible to treat exhaustively in a pamphlet a subject which is discussed in many large volumes and in which new information is constantly being gathered; but it is hoped that these pages indicate the general methods to be followed. In every respect, the statements made here are intended to be suggestive; the feeding devices are susceptible of many modifications, and the lists of foods and of food-plants might have been extended almost indefinitely. Again the reader must remember that part of the interest of a feeding station lies in the opportunity it affords for experiment and observation on the diet of different kinds of birds.

Good results in taming "wild" birds are attainable at feeding stations. The foods most relished by the birds, such as finely crushed walnuts, may be offered only at a window-sill, or at certain times of the day when observers are present, or when certain whistles or calls are given. The birds will learn to come for this favorite food; and, by dint of gentleness and patience, birds will often lose all fear of man. Chickadees are usually the first to respond, and it is not uncommon to have them feed from one's hand; and other more timid birds will soon follow their example. At the writer's feeding station, Downy Woodpeckers, Flickers, Chickadees, White-breasted Nuthatches, and Slate-coloured Juncos come freely to the veranda when several people are talking there; and many other species come to trees within two or three yards. Besides the great interest created, this gives excellent opportunities for the closest observation of the actions of the birds.

In conclusion it should be emphasized that it is possible for almost everyone to make use of some of these suggestions for attracting birds. It is likewise possible for most people to erect some of the types of bird houses described in the companion pamphlet. The smallest city garden can include one or two fruit-bearing shrubs, say a Sumac and an Elder; a clump or two of seeding plants or a supply of seeds and scraps may be placed on a corner of the lawn; and a small bird-bath can be located nearby. Even dwellers in an apartment house may succeed in bringing Downy Woodpeckers or Chickadees in view of their windows or even to their window-sills by placing lumps of suet or of "bird-stone" in the nearby trees. All organizations, interested in Nature Study or in the Conservation of birds and wild things generally, should undertake this work. Troops of Boy Scouts and Girl Guides can equip and maintain feeding stations, visiting them regularly on their "hikes." Many teachers, in urban as well as in rural schools, find a simple feeding station of great use in connection with the Natural History lessons; and here children may be introduced to the world out-of-doors—a strange world to so many of our city dwellers. More and more, farmers and market-gardeners are realizing the value of insect-eating and weed-seed-eating birds; and on large farms and small gardens efforts are now being made to attract the birds. On a large scale if possible, or at least on a modest scale, everyone who reads this pamphlet is urged to put its ideas into practice. Whether your motive is humanitarian or utilitarian, whether your interest is in studying at close range the habits of birds or is in securing protection for your crops or flowers, you will be amply repaid for your efforts.

LISTS OF TREES, SHRUBS, AND CLIMBERS ATTRACTIVE TO BIRDS

I. Species suitable for planting in Eastern Canada

Name	Season	Remarks
Red cedar (<i>Juniperus virginiana</i>).....	All year	Evergreen tree. Best evergreen
Juniper (<i>Juniperus communis</i>).....	All year	Evergreen tree. This and other evergreens very useful
Siberian pea-tree. (<i>Caragana arborescens</i>)	July	Tree For cat-proof thickets
Summer grape (<i>Vitis aestivalis</i>).....	Aug.-June	Climber } Flowers attract Hummingbirds
Frost grape (<i>Vitis vulpina</i>).....	July-Oct.	Climber } Tangles for food and shelter in winter
Virginia creeper (<i>Psedera quinquefolia</i>)	Aug.-Feb.	Climber }
Hackberry (<i>Celtis occidentalis</i>).....	All year	Tree
Pasture rose (<i>Rosa humilis</i>).....	All year	Shrub All hardy roses with small fruits are useful
Snowberry (<i>Symphoricarpos racemosus</i>)....	All year	Shrub
Fragrant sumac (<i>Rhus canadensis</i>).....	All year	Shrub }
Staghorn sumac (<i>Rhus typhina</i>).....	All year	Shrub } Very good in spring
Mountain ash (<i>Pyrus americana</i>).....	Aug.-Mar.	Tree Also other non-poisonous species
Bayberry (<i>Myrica carolinensis</i>).....	Aug.-May	Shrub
Asiatic service-tree (<i>Amelanchier asiatica</i>)	Sept.-Mar.	Shrub
Cockspur thorn (<i>Crataegus Crus-galli</i>)....	Aug.-Mar.	Tree Other species also good
High-bush cranberry (<i>Viburnum Opulus</i>)	July-Apr.	Shrub }
Arrow-wood (<i>Viburnum acerifolium</i>).....	July-Mar.	Shrub } Other species also attractive to birds
Sheepberry (<i>Viburnum Lentago</i>).....	Aug.-Mar.	Shrub }
Blueberries (<i>Vaccinium</i> spp.).....	June-Sept.	Shrub Several useful species
Wild blackberry (<i>Rubus allegheniensis</i>)	June-Sept.	Shrub } Good. Also several other species
Dwarf raspberry (<i>Rubus triflorus</i>).....	June-Sept.	Shrub }
Wild blackberry (<i>Rubus canadensis</i>).....	June-Sept.	Shrub }
Wild black cherry (<i>Prunus serotina</i>).....	July-Nov.	Tree Protect cultivated fruit. Also other species.
Sand cherry (<i>Prunus pumila</i>).....	June-Aug.	Tree }
Wild gooseberry (<i>Ribes Cynosbati</i>).....	June-Sept.	Shrub } Other species also useful
Red currant (<i>Ribes vulgare</i>).....	June-Sept.	Shrub }
Common elder (<i>Sambucus canadensis</i>).....	July-Oct.	Shrub }
Red-berried elder (<i>Sambucus racemosa</i>)....	June-Aug.	Shrub } Eaten by more species of birds than any fruit
Black huckleberry (<i>Gaylussacia baccata</i>)....	July-Oct.	Shrub Other species also
Juneberry, Shad (<i>Amelanchier canadensis</i>)	June-Oct.	Shrub Very good, protects fruit
White Mulberry (<i>Morus alba</i>).....	May-Aug.	Tree Valuable, protects fruit
Flowering dogwood (<i>Cornus florida</i>).....	Aug.-Dec.	Tree } Very good, especially for Thrushes
Red osier dogwood (<i>Cornus stolonifera</i>)....	June-Mar.	Shrub } Other species also good
Alternate-leaved dogwood (<i>C. alternifolia</i>)	July-Oct.	Shrub }
Spice bush (<i>Benzoin aestivalis</i>).....	July-Nov.	Shrub

II. Species suitable for planting in the Prairie Provinces

Name	Season	Remarks
White Spruce (<i>Picea canadensis</i>).....	All year	Evergreen tree. Best evergreen
Blue spruce (<i>Picea pungens</i>).....	All year	Evergreen tree } Good for food and shelter
Scotch pine (<i>Pinus sylvestris</i>).....	All year	Evergreen tree }
Ground cedar (<i>Juniperus Sabina</i>).....	All year	Evergreen shrub }
Siberian pea-tree (<i>Caragana arborescens</i>)....	July	Tree For cat-proof thickets
Bearberry, Kinikini, (<i>Arctostaphylos Uva-ursi</i>)	Sept. Feb.	Trailer } Tangles for food and shelter in winter
Virginia creeper (<i>Psedera quinquefolia</i>)....	Sept.-Feb.	Climber }
Bush honeysuckle (<i>Lonicera tatarica</i>).....	Sept.-Mar.	Shrub Other species also
Nannyberry (<i>Viburnum Lentago</i>).....	Aug.-Mar.	Shrub Other species also useful
High-bush cranberry (<i>Viburnum Opulus</i>)....	Sept.-Oct.	Tree
Snowberry (<i>Symphoricarpos racemosus</i>)....	Oct.-May	Shrub
Wolf willow (<i>Elaeagnus argentea</i>).....	Oct.-Mar.	Shrub
Juneberry, Saskatoonberry (<i>Amelanchier spicata</i>)	June-July	Shrub
Wild raspberry (<i>Rubus</i> spp.).....	July	Shrub Several good species
Pin cherry (<i>Prunus pennsylvanica</i>).....	Aug.-Oct.	Tree Good, also other species.
Choke cherry (<i>Prunus demissa</i>).....	Sept.-Mar.	Tree }
Wild black currant (<i>Ribes floridum</i>).....	Aug.-Sept.	Shrub }
Missouri currant (<i>Ribes aureum</i>).....	Aug.-Sept.	Shrub }
Hawthorns (<i>Crataegus</i> spp.).....	Aug.-Sept.	Tree Several useful species

II. Species suitable for planting in the Prairie Provinces—concluded

Name	Season		Remarks
Thorn (<i>Cotoneaster acutifolium</i>).....	Aug.-Dec.	Shrub	Other species also
Elderberries (<i>Sambucus</i> spp.).....	Sept.-Oct.	Shrub	Several useful species
Wild rose (<i>Rosa blanda</i>).....	Oct.-Jan.	Shrub	All hardy roses with small fruit are useful
Japan rose (<i>Rosa rugosa</i>).....	Sept.-Jan.	Shrub	
Mountain ash (<i>Pyrus americana</i>).....	Oct.-Dec.	Tree	P. Baccata also useful
Sea buckthorn (<i>Hippophae rhamnoides</i>).....	Oct.-Dec.	Shrub	
Buffaloberry (<i>Shepherdia argentea</i>).....	Oct.	Shrub	
Dogwood (<i>Cornus stolonifera</i>).....	Oct.-Nov.	Shrub	Good, especially for Thrushes

III. Species suitable for planting in Southern British Columbia

Name	Season		Remarks
Juniper (<i>Juniperus scopulorum</i>).....	All year	Evergreen tree	Others also useful for food and shelter
Yew (<i>Taxus brevifolia</i>).....	All year	Evergreen tree	
Siberian pea-tree (<i>Caragana arborescens</i>)....	July	Tree	For cat-proof thickets
Holly (<i>Ilex Aquifolium</i>).....	All year	Tree	Flowers attract Hummingbirds
Roses (<i>Rosa</i> spp.).....	All year	Shrub	For food and shelter
Sumac (<i>Rhus glabra</i>).....	All year	Shrub	All hardy roses with small fruits useful
Mountain ash (<i>Pyrus</i> spp.).....	Winter	Tree	East of Cascade Mts.
Barberries (<i>Berberis</i> spp.).....	Winter	Shrub	Several useful species
Bearberry (<i>Arctostaphylos Uva-ursi</i>).....	Winter	Trailer	Several useful species
Broom (<i>Cytisus scoparius</i>).....	Winter	Shrub	For food and shelter
Corse (<i>Ulex europaeus</i>).....	Winter	Shrub	In low tangles. Very good for food and shelter
Firethorn (<i>Pyracantha coccinea</i>).....	Oct.-Feb.	Climber	Valuable
Ninebark (<i>Neillia opulifolia</i>).....	Winter	Shrub	
Snowberry (<i>Symphoricarpos racemosus</i>)....	Winter	Shrub	
Osoberry (<i>Nuttallia cerasiformis</i>).....	June	Shrub	Protects cherries, etc.
Wild currants (<i>Ribes</i> spp.).....	July	Shrub	Several useful species
Salmonberry (<i>Rubus spectabilis</i>).....	June	Shrub	Good in wet ground
Purple raspberry (<i>Rubus leucodermis</i>).....	July	Shrub	Good in dry ground
Evergreen blackberry (<i>Rubus laciniatus</i>) ..	Sept.-Oct.	Trailer	Other species also
Buckthorn (<i>Rhamnus Purshiana</i>).....	July-Aug.	Tree	Good
Wild cherries (<i>Prunus</i> spp.).....	July-Aug.	Shrub	Several useful species
Elderberries (<i>Sambucus</i> spp.).....	July-Aug.	Shrub	Several useful species
Bush honeysuckle (<i>Lonicera involucratum</i>)..	July-Aug.	Shrub	Other species also
Honeysuckles (<i>Lonicera</i> spp.).....	Aug.-Sept.	Climber	Several useful species
Thornapple (<i>Crataegus Douglasii</i>).....	Aug.-Sept.	Tree	
Red osier dogwood (<i>Cornus stolonifera</i>)....	Aug.-Sept.	Shrub	These and other species very good for many birds
Bunchberry (<i>Cornus canadensis</i>).....	Aug.-Oct.	Shrub	
Blueberries (<i>Vaccinium</i> spp.).....	Aug.-Dec.	Shrub	Several useful species
Salal (<i>Gaultheria Shallon</i>).....	Aug.-Oct.	Shrub	
Crabapple (<i>Pyrus diversifolia</i>).....	Sept.-Dec.	Tree	West of Cascade Mts.
Arbutus (<i>Arbutus Menziesii</i>).....	Oct.-Dec.	Tree	

NOTE:—Acknowledgments are gratefully made for the advice of Mr. W. T. Macoun, Dominion Horticulturist, in regard to the three lists given above; and for the assistance of Messrs. Walter B. Anderson and Archibald Mitchell in regard to the lists for Southern B.C. and for the Prairie Provinces respectively.